NOTE XIII.

ON THE GENUS CHLOEIA

WITH SOME NEW SPECIES FROM THE MALAY-ARCHIPELAGO, PARTLY COLLECTED BY THE SIBOGA-EXPEDITION

BY

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Our knowledge of the genus *Chloeia*, though containing Annelids that for the greatest part are obviously coloured and are living in shallow water, is very incomplete; for although about twenty species have been described, it is a fact that more than half this number is insufficiently characterized and based upon badly preserved specimens, having not only lost their distinct colour-markings, but the bristles of which were also disorganized. Although the great Annelidologist Grube in his description of *Chl. egena*[1]) says: „durch das lange Liegen in Weingeist mögen manche Veränderungen entstanden sein, es ist mir aber nicht wahrscheinlich, dass die dunklen, so bestimmt umschriebenen ansehnlichen Flecken, welche bei *Chl. flava* auf der Mittellinie des Rückens stehen, spurlos verschwunden sein sollten" etc., yet this really happens. So f. i., in a specimen of *Chl. flava* in our museum, brought home from Japan by von Siebold, the dorsal spots have totally disappeared and a couple of individuals of *Chl. parva*, preserved only for a year in formaline, are entirely discoloured and have lost all colour-markings. Even the bristles, being of calcareous composition, appear to undergo, probably in consequence of the development of traces of acid in the preserving fluid, consider-

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1) Archiv f. Naturgesch. Jahrg. XXI, Bd. I, 1855, p. 92.

able changes and to lose sometimes entirely their serrulations[1]; f. i. in the collections of the Leyden Museum there is a specimen of *Chl. flava*, from the Port of Singapore, that for some time was preserved in formaline, showing only smooth bristles. Also the *Chl. flava* mentioned by Quatrefages, characterized „remus superus setis laevibus" [2]), can be explained in this manner. Moreover Marenzeller[3]) in 1893 fixed the attention thereupon, that the bristles, contained in the anterior body-segments, differ from those of the following ones, and because this character is overlooked in the elder descriptions of the species, „treten die Mängel der bisherigen charakteristik der *Chloeia*-Arten klar zu tage" (Marenzeller). In the following table those species of *Chloeia* are enumerated, which appear to me sufficiently described and figured to be recognized.

CHLOEIA.

A. Branchiae commencing on the 2d segment?

1. *candida* Kinb.[4]), Animalia annulata nova, Amphinomea, Ofversigt af Kongl. Vet.-Akad. Förh. Årg. XIV, 1857, p. 11; Kongl. Svenska Freg. Eugenies Resa, Vetensk. Iakttag. Zoologi, Annulata, pl. XI, fig. 2.
   St. Thomas.

B. Branchiae commencing on the 4th segment.

2. *amphora*, n. sp.
   Strait of Malacca, Banda Islands, Samau and Soeloe.
3. *conspicua*, n. sp.
   Sumatra, Atjeh; South-coast of Java.
4. *euglochis* Ehl., Florida-Anneliden, Mem. of the Museum of Comp. Zoology at Harvard College, Vol. XV, 1887, p. 18, pls. 1—3; Marenzeller, Polychäten des Grundes,

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[1] Also stated by M'Intosh in *Chl. fucata*: Trans. Zool. Society, Vol. IX, 1877, p. 396.

[2] Histoire naturelle des Annelés, p. 387.

[3] Polychäten des Grundes: Denkschr. Math.-Naturw. Classe K. Akad. d. Wiss. Wien, Bd. LX, p. 3.

[4] After Kinberg not observed by any other naturalist.

Denkschr. d. Mathem.-Naturw. Cl. d. K. Akad. d. Wissensch. Wien, Bd. LX, 1893, p. 3; Treadwell, Bull. U. St. Fish Commission for 1900, Vol. XX.
Tortugas, Florida, Porto-Rico, Teneriffe, Dakar.

5. *flava* Pall. (*capillata* Brug., *incerta* Qtrf., *ceylonica* Gr., *tumida* Baird, *pulchella* Baird), Pallas, Miscell. zoologica, 1766, p. 97, pl. VIII, figs. 7—11; Quatrefages, Hist. Nat. des Annelés, 1865, p. 386, pl. 17, figs. 4, 5; Grube, Annulata Semperiana, Mém. de l'Acad. d. Sc. de St. Pétersbourg, (7e sér.) t. XXV, 1878, p. 10; M'Intosh, Challenger-Annelida, p. 8, pl. III, figs. 1 and 3, pl. I A, figs. 7—9.
   Gulf of Bengal (Pall.), Philippines, Salawatti, Amboina (Gr.), Japan, Arafura-Sea (Chall.), Ceylon (Willey).
6. *macleayi* Haswell, Proc. Linn. Soc. of N. S. Wales, III, 1879, p. 341.
   Cape Sidmouth, Australia.
7. *modesta* Ehl., Florida-Anneliden, loc. cit. p. 21, pl. 2, figs. 6—8, pl. 3, figs. 3 and 4; Marenzeller, Polychäten des Grundes, loc. cit. p. 3.
   Florida, Funchal.
8. *parva* Baird (*merguiensis* Bedd.), Monograph of the Amphinomacea: Journ. Linnean Soc. (Zoology), Vol. X, 1870, p. 233, pl. IV, figs. 8 a, b.; Beddard, ibidem, Vol. XXI, 1889, p. 258, pl. 21, figs. 2, 8 and 9; Marenzeller, loc. cit. p. 3.
   Mergui Archipelago, Cebu, New-Guinea, Semarang.
9. *venusta* Qtrf. loc. cit. p. 391; M'Intosh (*Chl. fucata*) Porcupine-Annelida, Trans. Zool. Soc. Vol. IX, 1877, p. 395; Marenzeller, loc. cit. p. 2, pl. I, fig. 1.
   Mediterranean, Algiers, Cerigo.
10. *violacea*, n. sp.
   Ceram, Waroe-bay; Soembawa, bay of Bima.
11. *viridis* Schmarda 1), Neue wirbellose Thiere, 1861, p. 144, pl. 35, figs. 295—305.
   Jamaica.

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1) After Schmarda not observed by any other naturalist.

C. Branchiae commencing on the 5th segment.

· 12. *fusca* M'Intosh, Challenger-reports, Zoology, Vol. XII, 1885, p. 14, pl. 2, figs. 1, 2; pl. I A, figs. 14, 15; pl. II A, figs. 1, 2.
Banda.

Chloeia bengalensis Kinb. and *Chl. malaica* Kinb. (Öfversigt af Kongl. Vet.-Akad. Förh. 1867, p. 86) are "nomina nuda", neither description nor figure having been published.

Chl. egena Gr., found by Grube in the Zoological Museum of the Petersburg-Academy, is also a very doubtful species, for it was not only quite discolored, but also the points of the bristles were broken off.

Chl. furcigera Qtrf., — *inermis* Qtrf. and — *nuda* Qtrf. are based upon specimens in an indifferent state of preservation.

Chl. spectabilis Baird is also a doubtful species, because the bristles of the ventral and dorsal feet are described as being "simple".

Chloeia amphora, n. sp.

Siboga-Exped.: 5 spec. near Banda, depth from 9 to 45 M., Stat. Soeloe and Stat. Haingsisi (Samau).

1 spec. coll. by van Kampen in the Strait of Malacca.

The length of the largest specimen 26 mm., its greatest breadth (without bristles) 7 mm.; the number of segments 24—26. Body somewhat heavy, not tapering posteriorly, of a buff colour; the bristles pale yellow. The skin wrinkled in the middle of the dorsum. Here each segment shows a violet spot, somewhat resembling a roman amphora, surrounded by a white band. Moreover in the anterior segments an oblique band is visible, running over the front-side of the parapodium. A violet stripe runs over the middle of the caruncle. The dorsal cirri are dark violet, the ventral ones colourless. The anal cirri rather long, finger-shaped. Labial folds dark. The caruncle bears about 20 lateral folds and extends till upon the anterior border of the 4th segment. The unpaired antenna does not reach the posterior end of the caruncle; of the paired antennae the superior ones are about half as long as the unpaired, the inferior ones are much shorter. The first branchia lies upon Segment IV. The ventral bristles slender, with bifurcated tip; their short limb measures almost the half of the long one. The dorsal bristles of the 7th segment and of the following ones are only slightly stouter, with a blunt spur and with the long limb serrated along its exterior border.

Chloeia conspicua, n. sp.

2 spec. Sumatra, West-coast of Atjeh, depth of 6½ fth.; coll. by C. F. Kruisinga, Aug. 1893.

1 spec. Sout-coast of Java, Dirk de Vries-bay, coll. by van Kampen, Dec. 1909.

The length of the largest specimen 65 mm., its greatest breadth 13 mm.; the number of segments amounts to 37. Body more slender than that of *Chl. flava,* colourless except some distinct markings on the dorsum. Here each segment shows a violet longitudinal stripe, somewhat narrower in the middle of its length and interrupted in the intersegmental grooves. On both sides this stripe is accompanied with a >-shaped band, including thus a rhomboid area on the middle of the back, from which a dark band emerges, running along the anterior side of the parapodium. A similar band extends from the base of each branchia towards the dorsal cirrus. The dorsal cirri are dark violet except a short basal part, that only is coloured at its anterior side; the ventral cirri are colourless. An undulated dark stripe over the middle of the caruncle, that extends till upon the 4th segment; the unpaired antenna violet, almost as long as the caruncle. The branchiae commence upon the 4th segment; the main stem and the branches are violet, the secondary pinnae ferrugineous. The bristles elongate, of a pale yellow-red colour in the Java-specimen; the ventral ones slender, bifurcated, with a short limb having more the character of a spine; the dorsal bristles of the 6th segment and of the following ones stouter, serrated, with a hardly visible spur.

Chloeia violacea, n. sp.

Siboga-Exped.: St. 174, North-coast of Ceram, Waroe-bay; St. 47, Bay of Bima.

A small slender worm, measuring only 22 mm. in length, its greatest breadth in the anterior third of the body being only 5 mm. The number of segments amounts to 26. The body has a greyish-brown colour; the bristles are yellow. Each segment has in the middle of its dorsum a violet spot, shaped as an inverted T, the horizontal limb of which just corresponds to the posterior border of the segment. The main stem of the branchiae and the dorsal cirri are dark violet and also a violet stripe runs over the middle of the caruncle. The last named organ reaches till upon the 4th segment; the unpaired antenna, springing from its anterior end, is longer than the caruncle, and the paired antennae too are rather long. The mouth seems to be limited posteriorly by the 2d segment, that is strongly folded in the middle. The ventral cirrus of the second segment is extraordinarily elongated, being about twice as long as that of the following segments. There are two long, tapering anal cirri.

The first branchia occurs on the 4th segment. The ventral bristles are slender, capillary, bifurcated; their shortest limb measures about a fifth of the length of the long one. The dorsal bristles of the anterior segments are stouter, also bifurcated, but the short limb measures only a third of the long one that has a smooth tip; in the 9th segment and in the following ones, these bristles have however the long limb serrulated at its exterior border.

Bathychloeia, n. g.

Branchiae bipinnate like as in *Chloeia*; first pair, on the fifth body-segment, much larger than those of the following ones. Eyes absent. Ventral bristles along the inner border coarsely denticulated.

Bathychloeia sibogae, n. sp.

Siboga-Exped.: St. 211, 5° 40′ Lat. S., 120° 45′ Long. E.; depth 1158 M.

Length of the single specimen $7\frac{1}{2}$ mm., its greatest breadth 3 mm.; number of segments 16. Body elongated oval, tapering posteriorly. Bristles pale yellow, opalescent, in the posterior segments strongly elongated, dorsally as well as ventrally, and surrounding the anal end with a hairy envelopment. The caruncle extends backward to the third segment and shows 10 to 12 loose, indistinct folds; the median tentacle hardly reaches till half its length. No eyes are visible. The mouth seems to be limited posteriorly by the 2d segment. Branchiae small, except those of the first pair which are situated on the 5th segment; these are very large and extend over two segments. Bristles much resembling those of *Chloenea atlantica*; those of the ventral fascicle very slender, bifurcated, the short limb more resembling a tooth, whereas the long limb has its inner border slightly convex and coarsely serrated. The dorsal bristles are thicker, the short limb measures about a fourth of the long one; beyond the fork the last one is somewhat curved outward and faintly serrated along its inner border. In the segments behind the 6th one there occur also other bristles, having their outer border furnished with regular serrations; another set of bristles appears to be quite smooth.

The genus *Chloenea* M'Int. (not Kinberg), though in many regards agreeing with *Bathychloeia*, is sufficiently distinguished by the uniformity of its branchiae and by the presence of a branchial cirrus besides the dorsal one on each parapodium.

Leyden Museum, March 1910.